

CLAIMS

Use of at least one hyaluronic acid derivative selected from the group consisting of:

- 5 A) Esters of hyaluronic acid wherein part or all of the carboxy functions are esterified with alcohols of the aliphatic, aromatic, arylaliphatic, cycloaliphatic, heterocyclic series
- B) The autocrosslinked esters of hyaluronic acid wherein part or all of the carboxy groups are esterified with the alcoholic functions of the same polysaccharide chain or other chains,
- 10 C) The cross-linked esters of hyaluronic acid wherein part or all of the carboxy groups are esterified with polyalcohols of the aliphatic, aromatic, arylaliphatic, cycloaliphatic, heterocyclic series, generating cross-linking by means of spacer chains ,
- 15 D) The hemiesters of succinic acid or heavy metal salts of the hemiester of succinic acid with hyaluronic acid or with partial or total esters of hyaluronic acid,
- E) the sulphated derivatives or N-sulphated derivatives of hyaluronic acid, said hyaluronic acid derivative being processed in the form of a three-dimensional structure enclosing empty spaces formed by communicating pores and/or fine
- 20 fibres or microfibrils entangled together for the preparation of a biocompatible biomaterial for the regeneration of mammal tissue, characterised in that:
- i) said biocompatible biomaterial is free from cellular components and/or products thereof;
- ii) when the hyaluronic acid derivative belongs to the aforementioned class (A) ,
- 25 and is processed in the form of a non woven tissue, it has an esterification degree lower than 85%
2. The use according to claim 1, wherein said mammal tissue is human tissue selected from the group consisting of epidermal, dermal, bone, cartilage, nerve, cardiovascular, adipose and hepatic tissues.
- 30 3. The use according to claim 1, wherein said esterification degree is comprised between 40 and 85%.

4. The use according to anyone of claims 1, or 3, wherein said esterification degree is comprised between 45 and 75%.

5. The use according to anyone of claims 4-6, wherein said esterification degree is comprised between 60 and 70%,

5 6. The use according to anyone of claims 3-7 wherein said partial ester is the hyaluronic partial ester with benzyl alcohol.

7. The use according anyone of claims 1-2, wherein said hyaluronic acid derivative is an autocrosslinked ester of class (B).

8. The use according to claim 7 for osteochondral regeneration.

10 9. The use according to anyone of claims 1-8 wherein said biocompatible biomaterial consists essentially of at least one of said hyaluronic acid derivatives in the form of three-dimensional structures with communicating hollow spaces created by pores and/or fine fibres or microfibrils entangled together.

15 10. The use according to anyone of claims 1-9 wherein said biocompatible biomaterial further comprises at least another biocompatible natural, semisynthetic and/or synthetic polymer.

11. The use according to anyone of claims 1-10, wherein said biocompatible biomaterial further contains pharmaceutically or biologically active substances.

20 12. The use according to any one of claims 1-11 wherein said biocompatible biomaterial further contains inside the non-woven fabrics, cords, liophylic compositions.

13. A method for regenerating in vivo mammal tissue comprising applying in vivo to the site requiring such a treatment a biocompatible biomaterial containing at least one hyaluronic acid derivative selected from the group consisting of:

25 A) Esters of hyaluronic acid wherein part or all of the carboxy functions are esterified with alcohols of the aliphatic, aromatic, arylaliphatic, cycloaliphatic, heterocyclic series,

B) The autocrosslinked esters of hyaluronic acid wherein part or all of the carboxy groups are esterified with the alcoholic functions of the same polysaccharide chain or other chains,

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C) The cross-linked esters of hyaluronic acid wherein part or all of the

carboxy groups are esterified with polyalcohols of the aliphatic, aromatic, arylaliphatic, cycloaliphatic, heterocyclic series, generating cross-linking by means of spacer chains ,

D) The hemiesters of succinic acid or heavy metal salts of the hemiester of succinic acid with hyaluronic acid or with partial or total esters of hyaluronic acid,

E) The sulphated derivatives or N-sulphated derivatives

said hyaluronic acid derivative being processed in the form of a three-dimensional structure enclosing hollow spaces formed by communicating pores and/or fine fibres or microfibrils entangled together, wherein:

- i) said biomaterial is free from cellular components and/or products thereof,
- ii) when said hyaluronic acid derivative is a partial ester of hyaluronic acid of class (A) and is processed in the form of non woven tissue, has an esterification degree lower than 85%

14. The method according to claim 13, wherein said mammal tissue is human tissue selected from the group consisting of epidermal, dermal, bone, cartilage, nerve, cardiovascular, adipose and hepatic tissues.

15. The method according to claim 13, wherein said hyaluronic acid derivative is a partial ester of hyaluronic acid of class (A) having an esterification degree comprised between 40 and 85% and is processed in the form of non woven tissue.

15. The method according to claim 13, wherein said hyaluronic acid derivative is a partial ester of hyaluronic acid of class (A) having an esterification degree comprised between 45 and 75% and is processed in the form of non woven tissue.

16. The method according to claim 13, wherein said hyaluronic acid derivatives is a partial esters of hyaluronic acid of class (A) having an esterification degree comprised between 60 and 70% and is processed in the form of non woven tissue.

17. The method according to claim 13, wherein said partial ester is a hyaluronic partial ester with benzyl alcohol.

18. The method according to claim 13, wherein said hyaluronic acid derivative is an autocrosslinked esters of class (B).

19. The method according to claim 13, wherein said hyaluronic acid derivative is an autocrosslinked esters of class (B), for osteochondral regeneration.

5 20. The method according to claim 13, wherein said biocompatible biomaterial consists essentially of said hyaluronic acid derivatives in the form of three-dimensional structures with communicating hollow spaces created by pores and/or fine fibres or microfibrils entangled together.

21. The method according to claim 13, wherein said biocompatible biomaterial
10 further comprises at least another biocompatible natural, semisynthetic and/or synthetic polymer.

22. The method according to claim 13, wherein said biocompatible material further contains pharmaceutically or biologically active substances.

23. The method according to claim 13, wherein said biocompatible biomaterial
15 further contains inside the non-woven fabrics, cords, liophylic compositions.

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